ABC™ cooler inlet
A new standard for cooler operation

Key benefits
- No snowmen
- Increased availability
- Reduced wear on cooler parts
- Improved heat recuperation
- Fuel savings
- Better operational control

Cooler challenges
Use of lower-grade alternative fuels in the cement industry is increasing. Because these fuels vary in quality and chemical composition, clinker granulometry and conveyance characteristics may differ. Unstable coating in the kiln burning zone may fall down, and processing difficulties may cause sticky clinker. Both problems may cause so-called snowmen and dead-zones in the cooler inlet.

The ABC™ inlet solution
The FLSmidth® ABC™ inlet combines the advantages of a stationary inlet section – good service life and good cooling-air distribution – with the advantages of a clinker conveyance system, uniform clinker distribution and effective elimination of snowmen. This protects mechanical parts in the cooler and eliminates undesired kiln stops.

No snowmen
Cement plants that experience snowmen in the cooling process spend a great deal of time monitoring and removing them – usually manually, which requires a kiln stop. At the Rohoznik cement plant in Slovakia, for example, kiln downtime dramatically decreased – from 11 stops in the last half of 2011 to no stops at all as of November 2012 – after conversion to the latest Cross-Bar® cooler layout, which includes an ABC inlet.

Flexible control
Flexible control of the blasting zone and the frequency and intensity of blasts helps to optimise clinker flow and distribution. The Mechanical Flow Regulator (MFR) also improves cooling efficiency. This flexible control concept makes it possible to regulate and optimise both the clinker bed across the inlet and the conveying speed. Better control of clinker flow means fast, even cooling and better heat recuperation.

Production savings
With improved heat recuperation from your ABC Inlet, it will be possible to decrease firing in the kiln or preheater, saving expensive fuel.
ABC Inlet design

Frame
The fixed inlet consists of a steel support frame which supports the air distribution grates. Both the smooth grate line and the built-in, forward-facing air slots greatly enhance the clinker flow during normal cooling operation.

Mechanical Flow Regulator (MFR)
The fixed ABC inlet section is aerated with a well-proven system. The pressurised below-grate compartment supplies cooling air to the clinker layer via the MFR system. The MFR valves maintain a constant flow of air through each grate plate and automatically compensate for the varying resistance of the clinker bed by actively introducing a pressure drop where needed hence no need for the traditional air beams.

In-grate blast system and cooling air
The MFR system maintains a supply of cooling air to the inlet section, irrespective of the clinker bed and porosity. This consistent cooling process is boosted by a shock blaster system, which releases compressed air directly through the grates and into the clinker bed, using the same air distribution system as the normal cooling air. Sharing the same distribution system ensures complete area coverage for cooling and blast air. The additional space requirement for two different distribution systems is no longer an issue.

Controlled blast
The blasting area is divided into 3–8 zones, depending on the size of the inlet. Within each zone, blasting frequency and intensity can be regulated according to various schedules. Pre-defined programmes – controlled from the Central Control Room – combine zones, frequency and intensity in a set pattern.

Key design features
- Tailor-made for your cooler
- Cast blast-grate plate
- Proven MFR Technology
- Flexible air blasting in zones